WELL COMPLETION DATA EXCEPTION

Rules Affected: Title 30 Texas Administrative Code (30 TAC) §290.41(c)(3)(A) and §290.46(n)(3)

Background

A Public Water System (PWS) is required by 30 Texas Administrative Code (30 TAC) §290.41(c)(3)(A) to submit well completion data for review and approval by the Texas Commission for Environmental Quality (TCEQ) prior to using a well for public consumption. Additionally, 30 TAC §290.46(n)(3) requires the PWS to maintain copies of the well completion data for the life of the well. A well completion data exception may be required if a PWS does not have a record of receiving approval by the TCEQ (or predecessor agency) of the well completion data for a new well, for an existing well being converted for use as a PWS well, or if the PWS cannot provide the well completion data when requested.

Well completion data is defined as follows:

1. Driller's log (geological log and material setting report);
2. Cementing certificate;
3. 36-hour pump test;
4. Microbiological testing results;
5. Chemical testing results;
6. Legible copies of the recorded deeds for all real property owned by the PWS within 150-feet of the well;
7. Legible copies of recorded sanitary control easements or other documents demonstrating compliance with the sanitary control easement for all property located within 150-feet of the well not owned by the PWS;
8. An original or legible copy of a United States Geological Survey 7.5 minute topographic quadrangle map showing the accurate location of the well; and
9. A map showing the location of the well in relation to the surrounding property boundaries.

When a PWS cannot provide documentation of receiving approval of a PWS well from the TCEQ, as a first step, the PWS should verify that it has all records pertaining to the well. The PWS should request copies of all correspondence pertaining to the water system from TCEQ's Central Records. Please note that Central Records will not search the files for specific items; they will simply copy the files that are available. Also, TCEQ staff cannot research the files for the PWS. For more information on obtaining copies from TCEQ Central Records, please visit the TCEQ Record Services website[i].

Other sources that may have documentation or records pertaining to the well include the local health department, local water well drillers, groundwater conservation districts, and the Public Utility Commission of Texas.

Guidance

If the needed well completion data is not found, a Well Completion Data Submittal Exception may be required. Note that if the information which comprises well completion data is not available, other types of exception requests may also be necessary. Discussed below are the items that comprise well completion data, and the materials which must be submitted by a PWS in order for the TCEQ to consider granting an exception to the well completion data submittal requirement or to the recordkeeping requirement. Please note that all documents are required to be submitted to the TCEQ when requesting an exception request pertaining to well completion data.

1. *Driller's Log* – This documentation consists of the geological log and material setting report that is typically provided by the driller. The geological log, in its simplest form, describes at what depth various types of soil materials are encountered. A material setting report typically describes the quantities, dimensions, and types of materials used in the construction of the well. It may also include pump information, such as pump manufacturer and pump capacity (gallons per minute) at a specified total dynamic head. The geological log and material setting report may both be provided on a *State of Texas Well Report* (well report) form completed by the well driller.

   If the geological information for the well is not available, the PWS must provide acceptable replacement geological information. The replacement geological information that will be considered by the TCEQ includes the following:

   - Substitute driller's logs or well reports from existing nearby wells – The submitted substitute driller's logs or well reports must document a sufficient clay layer considered to be protective of the source, and must be for wells that are at least as deep as the PWS well. In the event that the depth of the PWS well is not known, or if the available substitute driller's logs are for wells that are not as deep as the PWS well, the TCEQ, at its discretion, may accept the substitute driller's logs provided the driller's logs verify the presence of a sufficient protective layer exists above the first water bearing unit. The submitted substitute driller's logs or well reports must be from wells no farther than ¼-mile from the PWS well. The driller's log or well reports must be accurately plotted on a United States Geological Survey (USGS) Map 7.5 Minute map as discussed later in this document.

   If there are no water wells documented within ¼-mile of the PWS well, but there are water wells with documented locations within 1-mile of the PWS well, please contact the Technical Review and Oversight Team at 512-239-4691 to discuss if the driller's logs or well reports from these wells may acceptable substitutes for the PWS driller's log.

   The following webpage is a resource for locating PWS wells which might be candidates for substitute drillers logs or well reports:

   TCEQ Source Water Assessment Viewer[ii]

Searchable resources for well logs are as follows:

Texas Water Development Board Groundwater Data Viewer[iii]

TCEQ Water Well Report Viewer[iv]

- A soil boring to collect the data – If acceptable substitute geological logs or well reports are not available, the PWS must install a soil boring to obtain the geological information and generate a replacement geological log. The depth of the soil boring must be at least equal to the depth of the PWS well, and be located at a distance of no further than 50-feet from the PWS well. If the depth of the PWS well is unknown, then the soil boring must be installed at least to the depth of the groundwater strata typically used for a water source in the area, as documented by driller's logs or well reports from other wells in the area. A licensed water well driller must install the soil boring, and it must also be plugged with cement in compliance with the regulations of the Texas Department of Licensing and Regulation. A copy of the geological log or well report for the soil boring and plugging report, signed and dated by water well driller, must be provided to the TCEQ as a part of the documentation for the well completion data exception.

When the original material setting report is not available, the PWS may supply certain documentation as a replacement material setting report. In order for the TCEQ to consider a replacement material setting report as a part of a well completion data exception, the following needs to be submitted by the PWS:

- Well Material Characterization – If there is no documentation of the materials used in the well, the PWS should request an exception to the well casing material requirement in 30 TAC §290.41(c)(3)(B) prior to the TCEQ granting a well completion data exception. The PWS must provide documentation of the well casing material as can be determined by the portion of the casing above the sealing slab. The documentation must include casing diameter and material. Clear photos of the casing must also be provided. The PWS must also provide copies of invoices for any repairs or equipment replacement, or any reports such as previously performed downhole videos that can provide information regarding the construction of the well or pumping equipment. A raw water sample analyzed for lead at a TCEQ-accredited laboratory with a current National Environmental Laboratory Accreditation Program (NELAP) certification, utilizing Environmental Protection Agency (EPA) approved methods, must be provided.

2. Cementing Certificate – A cementing certificate is typically provided to the PWS by the well driller at the time that the well is drilled. It documents the cementing method and materials used to seal the annular radius of the well. In order for the cementing certificate to be considered acceptable by the TCEQ, the document must include the cement mix (gallons of water per sack), amount and type of any additives added to the cement mix, the total amount of cement used (sacks), the depth of the well cemented, and the pressure cementation method. This information may also be found on the well report. If this information is

unavailable, or if the available information indicates that the annular radius seal does not comply with the Chapter 290 rules, the PWS may request an exception to the pressure cementation method requirement in 30 TAC §290.41(c)(3)(C) concurrent with the well completion data exception request. The PWS may request an exception by providing the information found on the pressure cementing exception checklist[v].

Granting of a pressure cementing method exception by the TCEQ will satisfy the cementing certificate requirement required for the well completion data.

3. *36-Hour Pump Test* – The 36-hour pump test is performed when the well is installed to develop the well and to determine its capacity. If this information is unavailable, the PWS may request an exception to the 36-hour pump test requirement in 30 TAC §290.41(c)(3)(G) concurrent with the well completion data exception request. Since an existing well should be developed, the point of the exception is to address well capacity. Two options, dependent on the status of the well, are available to do this:

   - The TCEQ has tested and rated the well– If the well has been issued a TCEQ Source ID number and has a tested or rated capacity listed in the TCEQ database, the PWS needs to document if the portion of the PWS served by the well has had water outages or boil water notices due to the well in the past 10 years. Documentation required to be provided by the PWS of these instances include the dates when the outages or boil water notices occurred, and their causes. If the TCEQ determines that the outage or boil water notices occurrences are caused by problems with the well that have not been corrected, it may require the PWS to collect daily water production data for 18 months as a requirement for granting an exception. A search of the Texas Drinking Water Watch database may be helpful in determining if a well rating exists for a particular well. The Texas Drinking Water Watch webpage can be accessed at the following address:

     Texas Drinking Water Watch[vi]

   - The well is currently not rated by the TCEQ – If the water system is not registered with the TCEQ, the well has not been issued a TCEQ Source ID number, or if the well does not have a tested or rated capacity in the TCEQ database, the PWS must determine the capacity of the existing well. The method required to be used to determine the actual capacity of a well depends on type of PWS.

     A PWS that has been classified as a community system must perform a 36-hour pump test to rate the well. A PWS classified by the TCEQ as a transient, or non-transient non-community water system is encouraged to perform a 36-hour pump test, but is not required to use this method to determine tested well capacity. The 36-hour pump test will be considered to be a substitute for the pump test that was required to be performed at the time the well was drilled and used to rate the well. In order to reduce water usage, shorter pumping periods may be accepted under the following conditions:

1. The pumping rate remains constant for at least four hours, and the pumping period has been a minimum of 24 hours; or,

2. The pumping rate remains constant for at least four hours, and a straight-line trend is observed on a plot of water level versus a logarithm of time during pumping and recovery.

Regardless of the method, the pump test procedure must comply with Section 5.1 of the most current edition of the American Water Works Association (AWWA) Standard A100, and a minimum of a four-hour resting period is required between prior pumping and the test itself.

A PWS that has been classified as a transient system or non-transient non-community water system may opt to provide well capacity information based on actual water usage. Actual water usage must be determined by rated well pump capacity and pump run times, as documented by an accurate elapsed time meter (ETM). The ETM must record run time to a minimum of one tenth of an hour. The well capacity will be determined on the daily recorded ETM measurements for 30 consecutive days. Note that the 30 day recording period cannot include periods of scheduled shut-down or system inactivity. For a PWS that typically experiences a time of peak water usage due to, but not limited to, production demand or seasonal demand, the 30 day period must capture this peak water usage.

4. *Microbiological Test Results* – Documentation of three consecutive days of raw water bacteriological sampling with negative results performed at the time the well was installed is required as a condition for use of a PWS well. The laboratory that performed the bacteriological analysis must have been accredited by the TCEQ or a predecessor agency at the time of the sampling. If this information is unavailable, the PWS must provide substitute analytical results consisting of three consecutive days of raw water sampling. The sampling must be performed within 6 months of the submittal of a request for an exception to the well completion data requirement. The samples must be analyzed at a TCEQ-accredited laboratory with a current NELAP certification. For a list of TCEQ-accredited laboratories see the Texas NELAP lab list[vii]. Note the chlorine residual level of the sample at the time the sample was collected (e.g. field measurement) must be included with the sample results and must be a numerical measurement of 0 (zero)(e.g. not "N/A").

5. *Chemical Analysis* - Documentation of a chemical analysis of the raw water performed at the time that the well was installed is required as a condition for use of a PWS well. The PWS must provide the results of a recent sampling event performed within 12 months of the submittal of a request for an exception for well completion data. The chemical sample results must be provided for the constituents currently required by regulation, and be analyzed at a TCEQ-accredited laboratory with a current NELAP certification, utilizing EPA approved methods. The required constituents are listed in Item 7 on the Well Completion Data checklist[viii]. Note the pH of the sample must be taken at the time the sample was collected (e.g. field measurement). Results of laboratory pH measurement are not acceptable.

6. *Recorded Deed(s)* – The PWS is required to supply documentation in the form of a legible, official copy of the recorded deed(s) and recorded easements, as appropriate, indicating its ownership of all real property within 150-feet of the well, or right to access the PWS well to insure that operation and maintenance activities can be performed. There is no substitute for this requirement. Unrecorded or unofficial copies of deeds or easement agreements are not acceptable.

7. *Recorded Sanitary Control Easements* – The PWS is required to supply documentation in the form of a legible, official copy of the recorded sanitary control easement (SCE) for all property within 150-feet of the well that it does not own. If a PWS does not have recorded SCEs for all property that it does not own within 150-feet of a PWS well, the PWS should acquire the needed SCE(s) prior to submitting the request for a well completion data exception. If the PWS cannot acquire a needed SCE, it may request an exception to SCE requirement by providing the information found on the sanitary control easement exception checklist[ix]. Unrecorded or unofficial copies of an SCE are not acceptable.

   The SCE exception must be submitted concurrently with the well completion data exception request. Note that a PWS with ordinance powers may substitute an enacted ordinance for otherwise needed SCEs.

8. *United States Geological Survey (USGS) 7.5 Minute Topographic Quadrangle Map* The well location shown on a current version of the appropriate USGS map or exact scale replica is an acceptable substitution if a USGS map contemporary with the installation of the well is not available. Photocopies of the USGS map are not acceptable due to distortion inherit in the photocopy process.

9. *Well Location Map* – A map indicating the boundaries of the well property and surrounding properties as they exist currently is an acceptable substitution if a map contemporary with the installation of the well is not available.

If you have questions regarding this guidance document or need to discuss some specific issue in complying with its requirements as they apply to your PWS, you may call 512-239-4691 and ask to speak to a member of the Technical Review and Oversight Team.

Finalized and Approved by:

5/8/18

Joel Klumpp, Plan and Technical Review Section Manager, 05/08/2018

If no formal expiration date has been established for this staff guidance, it will remain in effect until superseded or canceled.

Revision History:

Date	Action	Action by
2/24/2016	Approved	Joel Klumpp
8/4/2016	Approved	Joel Klumpp
5/24/2017	Approved	Joel Klumpp
10/20/2017	Revised	Michael McDevitt
05/08/2018	Approved	Joel Klumpp

[i] http://www.tceq.texas.gov/agency/data/records-services/fileroom.html
[ii] https://www.tceq.texas.gov/gis/swaview
[iii] http://www2.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer
[iv] http://www.tceq.texas.gov/gis/waterwellview.html
[v] http://www.tceq.texas.gov/assets/public/permitting/watersupply/pdw/Pressure_Cementing_Method_Checklist.pdf
[vi] http://dww2.tceq.texas.gov/DWW/
[vii] http://www.tceq.texas.gov/assets/public/compliance/compliance_support/qa/txnelap_lab_list.pdf
[viii] https://www.tceq.texas.gov/assets/public/permitting/watersupply/ud/forms/10234.pdf
[ix] http://www.tceq.texas.gov/assets/public/permitting/watersupply/pdw/Sanitary_Control_Easement_Exception_Checklist.pdf